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MICHIGAN COMPANY TO ADAPT TECHNOLOGY

NASA Satellite Technology to Monitor Motor Vehicle Pollution

Cities and states may soon have a new high-tech tool in the battle against automotive air pollution, thanks to NASA satellite technology originally developed to track global greenhouse gases and the Earth's protective ozone layer.

As envisioned, NASA's atmospheric remote sensing technology will be adapted to an autonomous roadside system to monitor motor vehicle emissions. Cars and trucks will pass through a low-power light beam, without stopping or slowing down. Space-age sensor technology will instantly analyze vehicle exhaust pollutants important to local and state governments working to meet federally mandated air quality standards.

“Taking an accurate reading of several exhaust products as a car passes by is a formidable challenge. We want to take a measurement of all the gases of interest every one thousandth of a second over a period of a half-second. Fortunately, our newest remote sensing technology has that capability,” said Glen Sachse, senior research scientist at NASA Langley Research Center, Hampton, Va. Sachse is one of six team members who invented the highly-sensitive electro-optical system at the core of the technology.

Today, NASA Langley and SPX Service Solutions, Warren, Mich., jointly announced that the patented NASA technology has been exclusively licensed to SPX for use in developing a new remote sensing device to monitor motor vehicle exhaust.

“Remote testing of vehicle exhaust will provide governments around the world with a fast, efficient and low-cost method to identify and reduce motor vehicle air pollution and greenhouse gases, which account for approximately one-half of all air pollution,” said Craig Rendahl, remote sensing business leader for SPX Service Solutions.

"With the number of vehicles on the road increasing every year, we believe there is a significant global market for technology of this nature," said Rendahl. “SPX will offer a basic unit which will be available at the end of 2000. With the help of NASA, we expect to begin

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manufacturing a highly enhanced remote sensing device before the end of 2001. This second-generation product will contain many other features, including the capability to test heavy-duty diesel vehicles."

The U.S. Clean Air Act mandates that a certain percentage of the U.S. fleet of vehicles be measured each year. The act allows for remote sensing as an option.

In a process called "clean screening," drivers who formerly took their vehicles in for an annual emissions inspection would receive a notice in the mail certifying that their vehicle has passed twice in a 12-month period and that they do not have to submit to an emissions test -- at least that's the expected outcome for most drivers. As individual roadside exhaust measurements are taken, the vehicle's license plate would be photographed and the data would be transmitted to a central collecting point.

Those drivers whose vehicles passed would save both time and money. Drivers whose vehicles failed or gave marginal readings would be identified for additional testing and possible emissions-related repairs.

In space, NASA uses remote sensing devices mounted on satellites and backlighting from the sun to take global atmospheric measurements as part of its Earth Science Enterprise program. The program is aimed at expanding knowledge of the Earth's environment in order to provide the scientific basis for sound policy decisions on environmental matters.

Service Solutions, a unit of SPX Corporation (NYSE: SPW), provides special service tools, equipment program management, electronic diagnostics, emissions testing equipment and technical information services for the global motor vehicle industry. SPX Corporation is a global provider of technical products and systems, industrial products and services, service solutions and vehicle components.

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Editor's Note: For more information or still images contact Keith Henry at h.k.henry@larc.nasa.gov. B-roll and soundbite video is available that includes animation of a vehicle and the light beam, and the technology's original space application. For video, contact Kim Land at 757/864-9885 or k.w.land@larc.nasa.gov.